

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Roderick MacKinnon

SERIAL NO.: NO YET ASSIGNED EXAMINER: UNKNOWN.

FILED : HEREWITH ART UNIT: UNKNOWN

FOR: ASSAYS FOR SCREENING COMPOUNDS WHICH INTERACT WITH CATION
CHANNEL PROTEINS, MUTANT PROKARYOTIC CATION CHANNEL
PROTEINS, AND USES THEREOF

STATEMENT

MAIL STOP PATENT APPLICATION
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

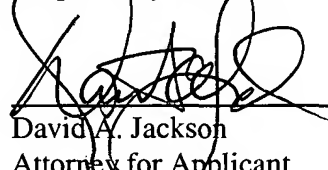
Dear Sir:

Applicants submit herewith an Information Disclosure Statement, listing references 1 through 178 on the attached Form PTO-1449.

This IDS was submitted in parent application USSN 09/275,252 March 24, 1999 with copies of all the listed references.

Applicants respectfully request that all copies of the cited references be transferred from the parent case to this continuation application filed herewith.

Respectfully submitted,



David A. Jackson
Attorney for Applicant
Reg. No. 26,742

KLAUBER & JACKSON
411 Hackensack Avenue
Hackensack, New Jersey 07601

Dated: July 3, 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

PATENT
Attorney Docket No.: 018512-002901US

Assistant Commissioner for Patents
Washington, D.C. 20231

On October 29, 2001

TOWNSEND and TOWNSEND and CREW LLP

By: H. Munn

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

MacKINNON, Roderick

Application No.: 09/275,252

Filed: March 24, 1999

For: ASSAYS FOR SCREENING
COMPOUNDS WHICH INTERACT
WITH CATION CHANNEL PROTEINS,
MUTANT PROKARYOTIC CATION
CHANNEL PROTEINS, AND USES
THEREOF

Examiner: Bugiasky, Gabriele E.

Art Unit: 1653

SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT UNDER 37
CFR §1.97 and §1.98

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

This IDS is being filed after the mailing date of the first Office Action and more than three months after the filing date, but prior to the Notice of Allowance or Final Office Action.

Please deduct \$180.00, pursuant to 37 CFR §1.17(p), from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

This Petition is submitted in triplicate.

Respectfully submitted,



J. David Smith
Reg. No. 39,839

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 415-576-0200
Fax: 415-576-0300
JDS:him

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Sheet	1	of	12
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Application Number	09/275,252
Filing Date	March 24, 1999
First Named Inventor	Roderick MacKinnon
Group Art Unit	1653
Examiner Name	Bugiasky, Gabriele E.
Attorney Docket Number	018512-002901US

[illegible]

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ²
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	14.	WO	91/19735			26 Dec. 1991		<input type="checkbox"/>
	15.	WO	93/20242			14 Oct. 1993		<input type="checkbox"/>
	16.	WO	92/00091			9 Jan. 1992		<input type="checkbox"/>
	17.	US	96/10287					<input type="checkbox"/>
	18.	WO	88/08534		MAY et al.,			<input type="checkbox"/>
	19.	WO	90/02545					<input type="checkbox"/>
	20.	European	0,281,327					<input type="checkbox"/>
	21.	European	0,280,559					<input type="checkbox"/>

Date Considered

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/275,252
		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Bugiasky, Gabriele E.
Sheet 2 of 12	Attorney Docket Number	018512-002901US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	22.	Koyama et al., <i>FEBS Lett</i> , 341:303-7 (1994)	<input type="checkbox"/>
	23.	Morishige et al., <i>FEBS Lett</i> , 346:251-6 (1994)	<input type="checkbox"/>
	24.	Inagaki et al., <i>J Biol Chem</i> , 270:5691-4 (1995)	<input type="checkbox"/>
	25.	Ferrer et al., <i>J Biol Chem</i> , 270:26086-91 (1995)	<input type="checkbox"/>
	26.	Ishii et al., <i>J. Biol. Chem</i> , 272:23195-200 (1997)	<input type="checkbox"/>
	27.	Gross et al., <i>Neuron</i> , 13:961-6 (1994)	<input type="checkbox"/>
	28.	Hanner et al., <i>J Biol Chem</i> , 273:16289-96 (1998)	<input type="checkbox"/>
	29.	Wang et al., <i>Proc Natl Acad Sci USA</i> , 95:2653-8 (1998)	<input type="checkbox"/>
	30.	Liman et al., <i>Nature</i> , 353:752-6 (1991)	<input type="checkbox"/>
	31.	Miller et al., <i>Neuron</i> , 16:853-8 (1996)	<input type="checkbox"/>
	32.	Tang et al., <i>J Gen Physiol</i> , 109:301-11 (1997)	<input type="checkbox"/>
	33.	Collioud et al., <i>Bioconjugate Chem</i> , 4:528-536 (1993)	
	34.	Schuhmann et al., <i>Adv. Mater.</i> , 3:388-391 (1991)	
	35.	Lu et al., <i>Anal. Chem.</i> , 67:83-87 (1995)	
	36.	Iwane et al., <i>Biophys. Biochem. Res. Comm.</i> , 230:76-80 (1997)	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		Filing Date	March 24, 1999		
		First Named Inventor	Roderick MacKinnon		
		Group Art Unit	1653		
		Examiner Name	Bugiasky, Gabriele E.		
Sheet	3	of	12	Attorney Docket Number	018512-002901US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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	37.	Ng et al., <i>Langmuir</i> , 11:4048-55 (1995)	
	38.	Schmitt et al., <i>Angew. Chem. Int. Ed. Engl.</i> , 35:317-20 (1996)	
	39.	Frey et al., <i>Proc. Natl. Acad. Sci. USA</i> , 93:4937-41 (1996)	
	40.	Kubalek et al., <i>J. Struct. Biol.</i> , 113:117-123 (1994))	
	41.	Sigal et al., <i>Anal. Chem.</i> , 68:490-497 (1996)	
	42.	Gascoigne et al., <i>Proc. Natl. Acad. Sci. USA</i> , 84:2936-2940 (1987)	
	43.	Capon et al., <i>Nature</i> , 377:525-531 (1989)	
	44.	Trauneker et al., <i>Nature</i> , 339:68-70 (1989).	
	45.	Heginbotham et al., <i>J Gen Physiol</i> , 111(6):741-9 (1998 Jun)	
	46.	Cuello et al., <i>Biochemistry</i> Mar 10, 37(10):3229-36. (1998)	
	47.	Shin et al., <i>FEBS Lett</i> Oct 6, 415(3):299-302 (1997)	
	48.	Santacruz-Toloza et al., <i>Biochemistry</i> , 33(6):1295-9. (Feb 1994)	
	49.	Furka et al., <i>Int. J. Pept. Prot. Res.</i> , 37:487-493 (1991)	
	50.	Houghten et al., <i>Nature</i> , 354:84-88 (1991)	
	51.	Hobbs et al., <i>Proc. Nat. Acad. Sci. USA</i> , 90:6909-6913 (Aug. 1993)	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/275,252
		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Bugiasky, Gabriele E.
Sheet 4 of 12	Attorney Docket Number	018512-002901US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	52.	Hagihara et al., <i>J. Amer. Chem. Soc.</i> , 114:6568 (1992)	
	53.	Hirschmann et al., <i>J. Amer. Chem. Soc.</i> , 114:9217-9218 (1992)	
	54.	Chen et al., <i>J. Amer. Chem. Soc.</i> , 116:2661 (1994)	
	55.	Cho, et. al., <i>Science</i> , 261:1303 (1993)	
	56.	Campbell et al., <i>J. Org. Chem.</i> , 59:658 (1994)	
	57.	Gordon et al., <i>J. Med. Chem.</i> , 37:1385 (1994)	
	58.	Vaughan et al., <i>Nature Biotechnology</i> , 14(3):309-314 (1996)	
	59.	Liang et al., <i>Science</i> , 274:1520-1522 (1996)	
	60.	Ackerman et al., <i>New Engl. J. Med.</i> , 336:1575-1595 (1997)	
	61.	Hamil et al., <i>Pflugers. Archiv.</i> , 391:85 (1981)	
	62.	Vestergaard-Bogind et al., <i>J. Membrane Biol.</i> , 88:67-75 (1985)	
	63.	Daniel et al., <i>J. Pharmacol. Meth.</i> , 25:185-193 (1991)	
	64.	Holevinsky et al., <i>J. Membrane Biology</i> , 137:59-70 (1994)	
	65.	Blatz et al., <i>Nature</i> , 323:718-720 (1986)	
	66.	Park, <i>J. Physiol.</i> , 481:555-570 (1994)	

Examiner Signature		Date Considered	
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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete If Known	
		Application Number	09/275,252
		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Buglasky, Gabriele E.
Sheet 5 of 12	Attorney Docket Number	018512-002901US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	67.	Kohler et al., <i>Nature</i> , 256:495-497 (1975)	
	68.	Kozbor et al., <i>Immunology Today</i> , 4:72 (1983)	
	69.	Cote et al., <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 80:2026-2030 (1983)	
	70.	Cole et al., in <i>Monoclonal Antibodies and Cancer Therapy</i> , Alan R. Liss, Inc., pp. 77-96 (1985)	
	71.	Morrison et al., <i>J. Bacteriol.</i> , 159:870 (1984)	
	72.	Neuberger et al., <i>Nature</i> , 312:604-608 (1984)	
	73.	Takeda et al., <i>Nature</i> , 314:452-454 (1985)	
	74.	Huse et al., <i>Science</i> , 246:1275-1281 (1989)	
	75.	Engvall, <i>Methods in Enzymology</i> , 70:419-439 (1980)	
	76.	Benoist et al., <i>Nature</i> , 290:304-310 (1981)	
	77.	Yamamoto, et al., <i>Cell</i> , 22:787-797 (1980)	
	78.	Wagner et al., <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 78:1441-1445 (1981)	
	79.	Brinster et al., <i>Nature</i> , 298:39-42 (1982)	
	80.	Villa-Komaroff, et al., <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 75:3727-3731 (1978)	
	81.	DeBoer et al., <i>Proc. Natl. Acad. Sci. U.S.A.</i> , 80:21-25 (1983)	

Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/275,252
		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Buglasky, Gabriele E.
Sheet 6 of 12	Attorney Docket Number	018512-002901US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	82.	Gilbert et al., <i>Scientific American</i> , 242:74-94 (1980)	
	83.	Swift et al., <i>Cell</i> , 38:639-646 (1984)	
	84.	Omizt et al., Cold Spring Harbor Symp. Quant. Biol., 50:399-409 (1986)	
	85.	MacDonald, <i>Hepatology</i> , 7:42S-51S (1987)	
	86.	Hanahan, <i>Nature</i> , 315:115-122 (1985)	
	87.	Grosschedl et al., <i>Cell</i> , 38:647-658 (1984)	
	88.	Adams et al., <i>Nature</i> , 318:533-538 (1985)	
	89.	Alexander et al., <i>Mol. Cell. Biol.</i> , 7:1436-1444 (1987)	
	90.	Leder et al., <i>Cell</i> , 45:485-495 (1986)	
	91.	Pinkert et al., <i>Genes and Devel.</i> , 1:268-276 (1987)	
	92.	Krumlauf et al., <i>Mol. Cell. Biol.</i> , 5:1639-1648 (1985)	
	93.	Hammer et al., <i>Science</i> , 235:53-58 (1987)	
	94.	Kelsey et al., <i>Genes and Devel.</i> , 1:161-171 (1987)	
	95.	Magram et al., <i>Nature</i> , 315:338-340 (1985)	
	96.	Kollias et al., <i>Cell</i> , 46:89-94 (1986)	

Examiner Signature		Date Considered	
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		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Bugiasky, Gabriele E.
Sheet 7 of 12	Attorney Docket Number	018512-002901US	

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	97.	Readhead et al., <i>Cell</i> , 48:703-712 (1987)	
	98.	Shani, <i>Nature</i> , 314:283-286 (1985)	
	99.	Mason et al., <i>Science</i> , 234:1372-1378 (1986)	
	100.	Bugg et al., <i>Scientific American</i> , 12:92-98 (1993)	
	101.	West et al., <i>TIPS</i> , 16:67-74 (1995)	
	102.	Lam et al., <i>Science</i> , 263:380-384 (1994)	
	103.	Wlodawer et al., <i>Ann. Rev. Biochem.</i> , 62:543-585 (1993)	
	104.	Appelt, <i>Perspectives in Drug Discovery and Design</i> , 1:23-48 (1993)	
	105.	Erickson, <i>Perspectives in Drug Discovery and Design</i> , 1:109-128 (1993)	
	106.	Scott et al., <i>Science</i> , 249:386-390 (1990)	
	107.	Cwirla et al., <i>Proc. Natl. Acad. Sci.</i> , 87:6378-6382 (1990)	
	108.	Devlin et al., <i>Science</i> , 249:404-406 (1990)	
	109.	Navaza, <i>Acta Crystallographica A</i> 50, 157-163 (1994)	
	110.	Hille, <i>Ionic Channels of Excitable Membranes</i> , Second Edition (Sinauer Associates, Inc. Mass. 1992)	
	111.	Hodgkin et al., <i>J. Physiol. (Lond.)</i> , 128:61 (1955)	

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	112.	Hagiwara et al., <i>J. Gen. Physiol.</i> , 70:269 (1977)	
	113.	Hille et al., <i>J. Gen. Physiol.</i> , 72:409 (1978)	
	114.	Neyton et al., <i>J. Gen. Physiol.</i> , 92:549 (1988)	
	115.	Armstrong et al., <i>J. Gen. Physiol.</i> , 48:859 (1965)	
	116.	Armstrong, <i>J. Gen. Physiol.</i> , 50:491 (1966)	
	117.	Armstrong, <i>J. Gen. Physiol.</i> , 54:553 (1969)	
	118.	Armstrong, <i>J. Gen. Physiol.</i> , 58:413 (1971)	
	119.	Heginbotham et al., <i>Science</i> , 258:1152 (1992)	
	120.	Heginbotham et al., <i>J. Biophys.</i> , 68:1061 (1994)	
	121.	Schrempf et al., <i>EMBO J.</i> , 14:5170 (1995)	
	122.	Heginbotham et al., <i>Biochemistry</i> , 36:10335 (1997)	
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	124.	MacKinnon, <i>Nature</i> , 350:232 (1991)	
	125.	Ketchum et al., <i>Nature</i> , 376:690 (1995)	
	126.	Doyle et al., <i>Science</i> , 280:69-77 (1998)	

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Sheet 9 of 12

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Application Number	09/275,252
Filing Date	March 24, 1999
First Named Inventor	Roderick MacKinnon
Group Art Unit	1653
Examiner Name	Buglasky, Gabriele E.
Attorney Docket Number	018512-002901US

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	127.	MacKinnon et al., <i>Science</i> , 280:106-109 (1998)	
	128.	Kleywegt et al., <i>Structure</i> , 5:1557 (1997)	
	129.	Deisenhofer et al., <i>Nature</i> , 318:618 (1985)	
	130.	Cowan et al., <i>Nature</i> , 358:727 (1992)	
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	135.	Goldstein et al., <i>Neuron</i> , 12:1377 (1994)	
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	139.	Ranganathan et al., <i>Neuron</i> , 16:131 (1996)	
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	141.	Armstrong et al., <i>J. Gen. Physiol.</i> , 59:388 (1972)	

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Sheet 10 of 12

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Application Number	09/275,252
Filing Date	March 24, 1999
First Named Inventor	Roderick MacKinnon
Group Art Unit	1653
Examiner Name	Bugiasky, Gabriele E.
Attorney Docket Number	018512-002901US

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	142.	MacKinnon et al., <i>Science</i> , 250:276 (1990)	
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	152.	Almers et al., <i>J. Physiol. (Lond.)</i> , 353:585 (1984)	
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	155.	Tate et al., <i>J. Appl. Cryst.</i> , 28:196 (1995)	
	156.	Thiel, et al., <i>Rev. Sci. Instrum.</i> , 67:3361 (1996)	

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Application Number	09/275,252
Filing Date	March 24, 1999
First Named Inventor	Roderick MacKinnon
Group Art Unit	1653
Examiner Name	Bugiasky, Gabriele E.
Attorney Docket Number	018512-002901US

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	157.	Otwinowski et al., <i>Science and Engineering Research Council, Daresbury Laboratory, Daresbury, UK</i> , (1993), pp. 56-62	
	158.	Collaborative Computational Project 4 (CCP4), <i>Acta Cryst.</i> , D50:760 (1994)	
	159.	Sheldrick, <i>Acta Cryst.</i> , 46:467 (1990)	
	160.	Jones et al., <i>Acta Cryst.</i> , A47:110 (1991)	
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	162.	Zhang et al., <i>Acta Cryst.</i> , A46:377 (1990)	
	163.	Kraulis, <i>J. Appl. Cryst.</i> , 24:946 (1991)	
	164.	Smart et al., <i>J. Mol. Graphics</i> , 14:354 (1996)	
	165.	Garcia et al., <i>J. Bioenerg. Biomem.</i> , 23:615 (1991)	
	166.	Miller, <i>Neuron</i> , 15:5 (1995)	
	167.	MacKinnon et al., <i>J. Gen. Physiol.</i> , 91:335 (1998)	
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	169.	Doyle et al., <i>Science</i> , 280:69-77 (1998)	
	170.	MacKinnon et al., <i>Science</i> , 245:1382 (1989)	
	171.	Hidalgo et al., <i>Science</i> , 268:307 (1995)	

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		Filing Date	March 24, 1999
		First Named Inventor	Roderick MacKinnon
		Group Art Unit	1653
		Examiner Name	Bugiasky, Gabriele E.
Sheet 12 of 12	Attorney Docket Number	018512-002901US	

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	172.	Garcia et al., <i>Biochemistry</i> , 33:6834 (1994)	
	173.	DeBin et al. <i>Am. J. Physiol. Soc.</i> , 264:C369 (1993)	
	174.	Lippens et al., <i>Biochemistry</i> , 34:13 (1995)	
	175.	Aggarwal et al., <i>Neuron</i> , 16:1169 (1996)	
	176.	Cohen et al., <i>Anal. Chem.</i> , 68:31 (1996)	
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